

# **THE DECISION TO DONATE: AN APPLICATION OF DUAL PROCESS THEORY**

An Undergraduate Research Scholars Thesis

by

MICHAEL BOACHIE-MENSAH

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Dr. Darrell Worthy

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## **ABSTRACT**

### **The Decision to Donate: An Application of Dual Process Theory**

Michael Boachie-Mensah  
Department of Veterinary Medicine and Biomedical Sciences  
Texas A&M University

Research Advisor: Dr. Darrell Worthy  
Department of Psychology  
Texas A&M University

The aim of this study was to examine the effects that personality and decision-making behavior have on charitableness. We assessed the personalities of our participants by running a series of personality tests based on psychometrics such as the Big Five personality traits. Participants then completed three decision-making tasks: the Delayed Discounting Task (DDT), the Iowa Gambling Task (IGT), and the Su-Chow Gambling Task (SGT). In each of these tasks, the options the participant chooses are correlated with certain rewards which accumulate as the participant continues to win. Lastly, participants were given the opportunity to donate a portion of their winnings to the Brazos Valley Food Bank, an operationalization of charitableness. There are no significant correlations between SGT or IGT net score and donation amount or decision to donate ( $p > .30$ ). However, a logistic regression with the Big Five personality traits predicting decision to donate, revealed a significant main effect of agreeableness ( $\beta = -.19$ ,  $p = .02$ ), extraversion ( $\beta = .16$ ,  $p = .02$ ), and a marginally significant effect of openness ( $\beta = -.09$ ,  $p = .055$ ). A logistic regression for substance abuse predicting donation decision revealed a significant main effect ( $\beta = .04$ ,  $p = .04$ ). There is also a marginally significant correlation between donation amount and substance abuse ( $r = -.22$ ,  $p > .09$ ). These results suggest that prosocial behavior, such as donating to charity, is impacted more by automatic, unconscious ways of thinking, embedded in our personality, than by the more effortful and complex thinking required in decision-making.

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## **NOMENCLATURE**

DDT	Delay Discounting Task
DPT	Dual Process Theory
IGT	Iowa Gambling Task
SGT	Soochow Gambling Task

# CHAPTER I

## INTRODUCTION

“Life is a sum of all your choices. So, what are you going to do today?” – Albert Camus. Every day, we make thousands of decisions. Will we hit the snooze button for the fifth time or get out of bed? Will we wear the same outfit we wore yesterday or choose something new? In fact, researchers at Cornell University found that we make 226.7 decisions each day on *food* alone (Wansink et al. 2007). Decision-making is a field of interest for psychologists, philosophers, and economists, among others. It has led to the development of Dual Process Theory (DPT), a framework that helps in understanding the decision-making process. DPT posits that our mind processes information into two pathways, referred to as System 1 and System 2. System 1 processes information in a fast, unconscious, automatic mode. Everyday decisions such as choosing Coke over Pepsi are dominated by System 1. In contrast, System 2 processes information in a slow, conscious, effortful mode. More complex decisions like deciding on a research paper topic require the operation of System 2. The goal of this article is to assess the role that DPT plays in the decision to donate.

We are all faced with the decision to donate at some point in our lives. College graduates are encouraged to donate to their alma mater, politicians request donations from people in order to run successful campaigns and gain re-election, and charitable organizations fighting pertinent issues depend on donations to accomplish their goals. But why do we donate? What makes us choose to donate to certain organizations over others? Why is it so essential for nonprofit organizations to know their target audience? Especially in today’s society, where donation

requests seem present at every turn, it is important to understand the factors behind the decision to donate.

The purpose of this study is to determine if System 1 or System 2 thinking contributes more to an individual's decision to donate. Personality tests based on the Big Five personality traits were used to determine System 1 characteristics. Psychological tasks, namely the Delay Discounting Task (DDT), the Iowa Gambling Task (IGT), and the Soochow Gambling Task were administered to participants to characterize System 2 thinking. Lastly, an individual's overall charitableness was determined by their willingness to donate to the Brazos Valley Foodbank, a "neutral" local charity. By using this approach, we are able to separate the two modes of the DPT and compare their individual effects on the decision to donate. We have also randomized the order of the tasks, removing any confounding variables that may have occurred due to the experiment design. We hypothesize that an individual's inherent personality contributes significantly to their decision to donate, rather than their more complex decision-making processes.

## **CHAPTER II**

### **METHODS**

#### **Participants**

Undergraduate Psychology students at Texas A&M were recruited at random to participate in the study. The experiments were performed using MATLAB software.

#### **Personality Type**

First, participants took a survey that determined their personality type. The surveys used established personality metrics such as the Big Five personality traits (extraversion, agreeableness, openness, conscientiousness, and neuroticism) and the Dark Triad personality traits (narcissism, Machiavellianism, and psychopathy).

#### **Delay Discounting Task**

After personality type was assessed, participants performed the Delay Discounting Task (DDT), which measures immediate versus delayed preferences for receiving rewards. Participants were repeatedly asked to choose if they prefer a small amount of money now or a larger amount of money at one of five specified delay intervals (1 day, 2 days, 1 month, 6 months, or 1 year) (Richards et al. 1999).

#### **Dynamic Decision Making Task**

Next, the Iowa Gambling task (IGT) and the Soochow gambling task (SGT) were administered (Bechara et al. 1994; Yao-Chu et al. 2008). These tasks examine decision-making processes. Participants were asked to choose a deck of cards out multiple options. The decks used in these experiments were a version of the decks used in previous studies (Worthy et al. 2011; Worthy et al. 2007). Each deck of cards was assigned a certain value, based on



randomized MATLAB functions. Each card deck also had a certain probability of winning and the higher winning deck alternated after every 20 trials.

### **Charity Manipulation**

On winning trials, participants won a randomized small amount of money (1, 5, or 10 cents). Experiment parameters were set so that the highest amount of money possible to win during an entire experiment was \$10. At the end of the experiment, the total points won by each participant was converted into a monetary value and participants were given the opportunity to donate all, or a portion of, their total winnings.

## CHAPTER III

### RESULTS

To determine the relationships between our variables, we used a binary logistic regression model, in which the dependent variable is coded as “0” or “1”; the decision to donate was coded as “0” and the decision to keep was coded as “1.” A logistic regression with the Big Five personality traits predicting decision to donate, revealed a significant main effect of agreeableness ( $\beta = -.19$ ,  $p = .02$ ), extraversion ( $\beta = .16$ ,  $p = .02$ ), and a marginally significant effect of openness ( $\beta = -.09$ ,  $p = .055$ ). A logistic regression for substance abuse predicting donation decision revealed a significant main effect ( $\beta = .04$ ,  $p = .04$ ). There is also a marginally significant correlation between donation amount and substance abuse ( $r = -.22$ ,  $p > .09$ ). A majority of our participants decided to donate the money rather than keep it. There were no significant correlations between donation amount and either SGT or IGT net score, and a logistic regression also showed no significant effects of either SGT or IGT net scores on the decision to donate ( $p > .30$ ).

## CHAPTER IV

### DISCUSSION

Our results provide support for the hypothesis that personality traits are positively correlated with overall charitable behavior. In contrast, IGT and SCT scores, which describe complex decision-making processes, had no significant relationship with donation decision. What do these results mean in relation to DPT? In DPT, one's personality is characteristic of System 1. Notable psychologists Carl Jung and Sigmund Freud both agreed that the unconscious mind determines personality (Freud 1933; Jung 1953). Therefore, System 1 has a significant effect on the decision to donate. In contrast, the decision-making tasks IGT and SGT require more deliberate and logical thinking in order to maximize gains and minimize losses. This is characteristic of the more controlled operations of System 2. Scores from these decision-making tasks had no significant effect on the decision to donate. We conclude that the decision to donate is primarily an *unconscious* process that is related to the personality of the individual, instead of a *conscious* process based on the individual's decision-making habits or known facts about the charitable organization. In other words, the decision to donate is effected more by System 1 thinking than by System 2 thinking. This may be important to advertisers, nonprofit organizations, and universities who benefit immensely from donations. Appealing to the personalities of individuals, rather than providing logical reasons to donate, may be a more effective method for fundraising. Likewise, these results may be important anyone yearning to understand why they choose to donate to certain organizations over others. In this case, the age-old saying, "go with your gut," may be the best mode of action.

## **CHAPTER V**

### **CONCLUSION**

The aim of this study was to demonstrate the effects that information processing systems have on the decision to donate. The main takeaway from our experiments is that an individual's decision to donate is effected more by their personality (System 1) than by complex thinking and rationalization (System 2). People ultimately choose to donate based on their personality traits and who they are. Someone hoping to become a more charitable individual might find benefit themselves more by focusing on personality development, instead of educating themselves on the numerous charitable organizations out there.

A common application of these findings may be found in the business world. In the marketplace, an individual's personality is known to shape consumer behavior. This has led to new marketing and psychology research that posits that advertisements are much more effective when the personality profiles of potential consumers are considered. For instance, a study conducted by Dr. Jacob Hirsh on the impact of personality on consumer behavior concluded with, "These results suggest that adapting persuasive messages to the personality traits of the target audience can be an effective way of increasing the messages' impact" (Hirsh et al. 2012). By considering the personality, or System 1 characteristics, of individuals, business and nonprofit organizations alike may be more successful in their pursuits.

In further studies, we will use statistical models to determine any significant correlations between specific personality traits and the decision to donate. Relationships between the independent variables and donation amount will also be assessed. Furthermore, we will run experiments to better describe the effect that substance abuse has on decision-making.

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